

The Implications of GLP-1 Receptor Agonists and Marijuana in Perioperative Care

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No financial disclosures.

Today's agenda

- Overview of GLP-1 Receptor Agonists
- GLP-1 Receptor Agonists and Anesthesia
- Overview and Trends of Marijuana Use
- Marijuana Use and Anesthesia
- Questions/Discussion

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Overview of GLP-1 Receptor Agonists

- “GLP” refers to glucagon-like peptide
- It has several roles in glucose homeostasis
 - Slows gastric emptying**
- GLP-1 is broken down by the enzyme DPP-4
- Synthetic GLP-1 agonists are resistant to breakdown by DPP-4
- Clinical use of GLP-1 agonists:
 - Primarily developed for the treatment of type 2 diabetes
 - Benefit has also been shown in patient with type 2 diabetes and coexisting cardiovascular disease and/or kidney disease
- **These drugs have rapidly gained popularity in the treatment of obesity, whether or not the patient has co-existing diabetes**
- There are several different agents currently in clinical use

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GLP-1 Receptor Agonists and Anesthesia

- Why are these drugs so important to us in anesthesia?
- The induction of anesthesia, whether general anesthesia or monitored anesthesia care (MAC/sedation), relaxes pharyngeal muscles and reduces reflexive/protective responses -> aspiration risk
- There are well-established guidelines for NPO (nil per os) times prior to elective surgeries to reduce this risk
- Aspiration is an uncommon, but potentially serious risk of anesthesia
- The use of these medications has greatly increased, necessitating review of the existing evidence to tailor perioperative guidelines
 - **Most recent guidelines:**
 - Continue taking GLP-1 receptor agonists perioperatively without interruption
 - Patients should follow a clear liquid diet for the 24 hours preceding their surgery

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Overview and Trends of Marijuana Use

- Marijuana comes from the plant *Cannabis sativa*
- The effects of marijuana are a result of delta-9-tetrahydrocannabinol (THC)
- To put it simply, marijuana use has increased
- **“Monitoring the Future Panel”**
 - Marijuana is the third most prevalent substance used in adults aged **35-65**
 - Use (12 month, 30 day, and daily) among adults ages **35 to 50** reached historic peaks in 2023
 - Daily use has significantly increased over the past 5 years and 10 years
 - Vaping remained at or near all time high levels
 - Nearly one-fifth (19.0%) of midlife adults ages **55 to 65** reported using cannabis in the past 12 months
- These numbers may be an under-representation



CBD?

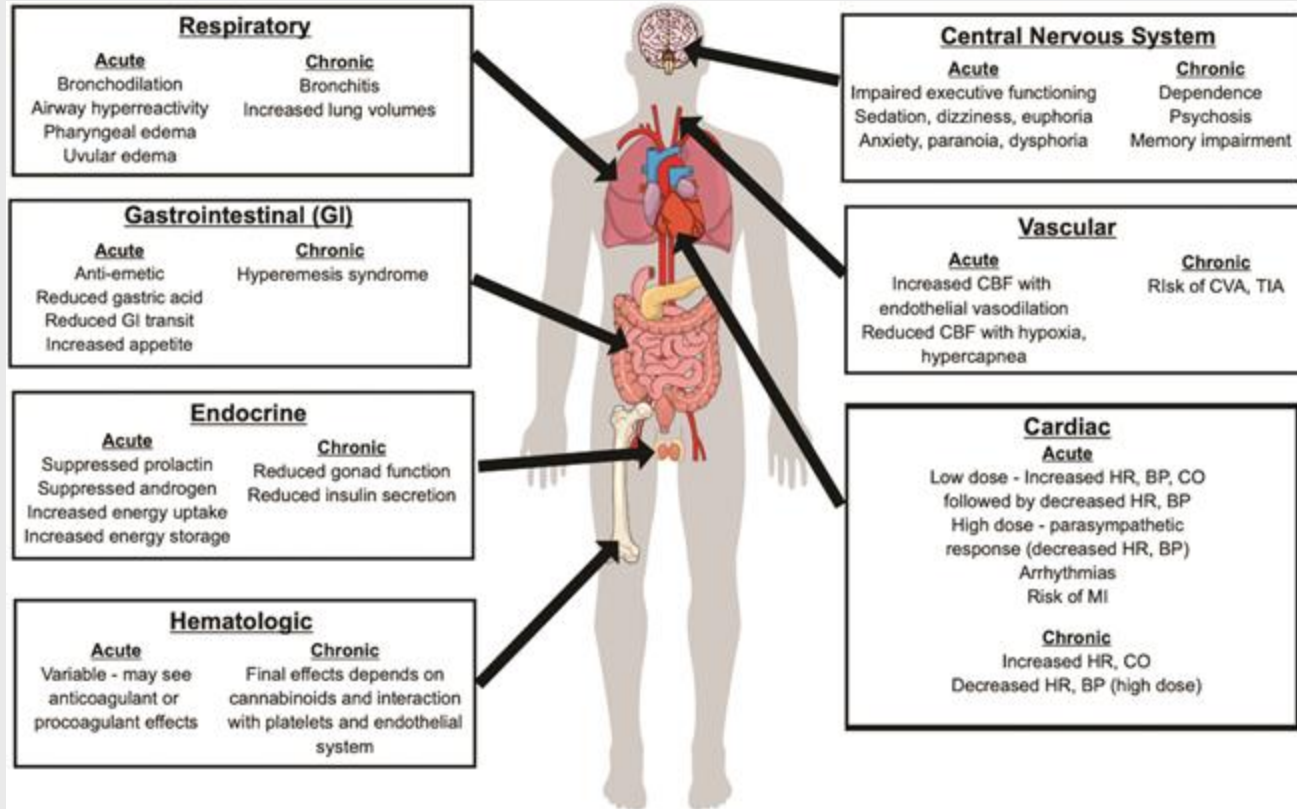
- CBD, or cannabidiol, is also derived from the *Cannabis* plant
- CBD is considered non-intoxicating as it does not have the same psychoactive effects as THC
- Its use has been studied in seizures, neuropathic pain, anxiety, depression and sleep
- Generally not relevant to anesthetic practice...

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Marijuana Use and Anesthesia





Marijuana Use and Anesthesia

- Patients acutely under the influence of marijuana should not undergo anesthesia
 - Ability to consent
 - Cardiovascular toxicity
- Route of use is important
 - Smoking/vaping places patients at risk of pulmonary side effects similar to nicotine
- Gastrointestinal symptoms
 - Cannabinoid hyperemesis syndrome
- Considerations in patients with acute use, chronic use and both

→ Summaries

Summary - GLP-1 Receptor Agonists and Anesthesia	<ul style="list-style-type: none">● GLP-1 receptor agonists have multiple effects, most notably for anesthesiologists being delayed gastric emptying which can place a patient at risk for aspiration	1	In general, a clear liquid diet should be followed 24 hours prior to elective surgery.
		2	Follow your hospital's protocol.
Summary - Marijuana Use and Anesthesia	<ul style="list-style-type: none">● Marijuana has systemic effects and has implications for anesthesia care.	1	Marijuana use is rising and all patients should be evaluated peri-operatively for use.
		2	Acute intoxication with marijuana is a reason to cancel elective surgeries.

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References

1. Joshi, Girish P. M.B.B.S., M.D.; (Co-Chair); Abdelmalak, Basem B. M.D.; (Co-Chair); Weigel, Wade A. M.D.; Harbell, Monica W. M.D.; Kuo, Catherine I. M.D.; Soriano, Sulpicio G. M.D.; Stricker, Paul A. M.D.; Tipton, Tommie B.S.N., R.N., C.N.O.R.; Grant, Mark D. M.D., Ph.D.; Marbella, Anne M. M.S.; Agarkar, Madhulika M.P.H.; Blanck, Jaime F. M.L.I.S., M.P.A.; Domino, Karen B. M.D., M.P.H.. 2023 American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting: Carbohydrate-containing Clear Liquids with or without Protein, Chewing Gum, and Pediatric Fasting Duration—A Modular Update of the 2017 American Society of Anesthesiologists Practice Guidelines for Preoperative Fasting*. *Anesthesiology* 138(2):p 132-151, February 2023. | DOI: 10.1097/ALN.0000000000004381
2. Most Patients Can Continue Diabetes, Weight Loss GLP-1 Drugs Before Surgery, Those at Highest Risk for GI Problems Should Follow Liquid Diet Before Procedure. ASA Press Release. February 2025. Accessed online: <https://www.asahq.org/about-asa/newsroom/news-releases/2024/10/new-multi-society-glp-1-guidance>
3. Hashash, Jana G. et al. AGA Rapid Clinical Practice Update on the Management of Patients Taking GLP-1 Receptor Agonists Prior to Endoscopy: Communication. *Clinical Gastroenterology and Hepatology*, Volume 22, Issue 4, 705 - 707
4. NIDA. Cannabis and hallucinogen use among adults remained at historic highs in 2023. National Institute on Drug Abuse website. <https://nida.nih.gov/news-events/news-releases/2024/08/cannabis-and-hallucinogen-use-among-adults-remained-at-historic-highs-in-2023>. August 29, 2024 Accessed October 1, 2025.
5. Patrick, M. Ph.D., Miech, R. Ph.D., Johnston, L. Ph.D., O'Malley, P. Ph.D., Monitoring the Future Panel Study Annual Report: National data on substance use among adults ages 19-65, 1976-2023. 2024. Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan. doi: 10.7826/ISR-UM.06.585140.002.07.0003.202
6. Goel, Akash M.D., M.P.H.; McGuinness, Brandon M.D.; Jivraj, Naheed K. M.B.B.S., M.Sc.; Wijeyesundera, Duminda N. M.D., Ph.D.; Mittleman, Murray A. M.D., Dr.P.H.; Bateman, Brian T. M.D., M.Sc.; Clarke, Hance M.D., Ph.D.; Kotra, Lakshmi P. B.Pharm. (Hons), Ph.D.; Ladha, Karim S. M.D., M.Sc.. Cannabis Use Disorder and Perioperative Outcomes in Major Elective Surgeries: A Retrospective Cohort Analysis. *Anesthesiology* 132(4):p 625-635, April 2020. | DOI: 10.1097/ALN.0000000000003067
7. Gould, R. MD., Lindenbaum, L. MD, Rogers, WK MD., Anesthetic considerations for adults with substance use disorder or acute intoxication. UpToDate. January 2025. Accessed online: https://www.uptodate.com/contents/anesthetic-considerations-for-adults-with-substance-use-disorder-or-acute-intoxication?search=marijuana%20use%20and%20anesthesia&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H1282454259
8. Lee, Bradley H. MD; Sideris, Alexandra PhD; Ladha, Karim S. MD; Johnson, Rebecca L. MD; Wu, Christopher L. MD., Cannabis and Cannabinoids in the Perioperative Period. *Anesthesia & Analgesia* 138(1):p 16-30, January 2024. | DOI: 10.1213/ANE.0000000000006070
9. Horvath, Balazs MD, FASA; Saadat, Haleh MD, FAAP; Kloesel, Benjamin MD, MBBS. Cannabis Hyperemesis Syndrome: Perioperative Concern with Potential Paradoxical Response to Propofol. *Anesthesia & Analgesia* 138(6):p e38-e39, June 2024. | DOI: 10.1213/ANE.0000000000006982



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→ Thank you!



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